

Scaled data based on original data using

LM-41-14 Approved Method for Photometric Testing Of Indoor Fluorescent Luminaires

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: io LED

Report Number: P251630

Luminaire Tested: **LD4B30D010 EU4B30509040 4LBSW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251630
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-13)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LD4B30D010 EU4B30509040 4LBSW1H
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2247.0 lumens
Efficiency: N/A
Efficacy: 80.3 lumens/watt
Spacing Criteria (0/90/45): 1.17 / 1.17 / 1.15
Luminous Opening: Circular (Dia: 0.38' x H: 0')
CIE Type: Direct

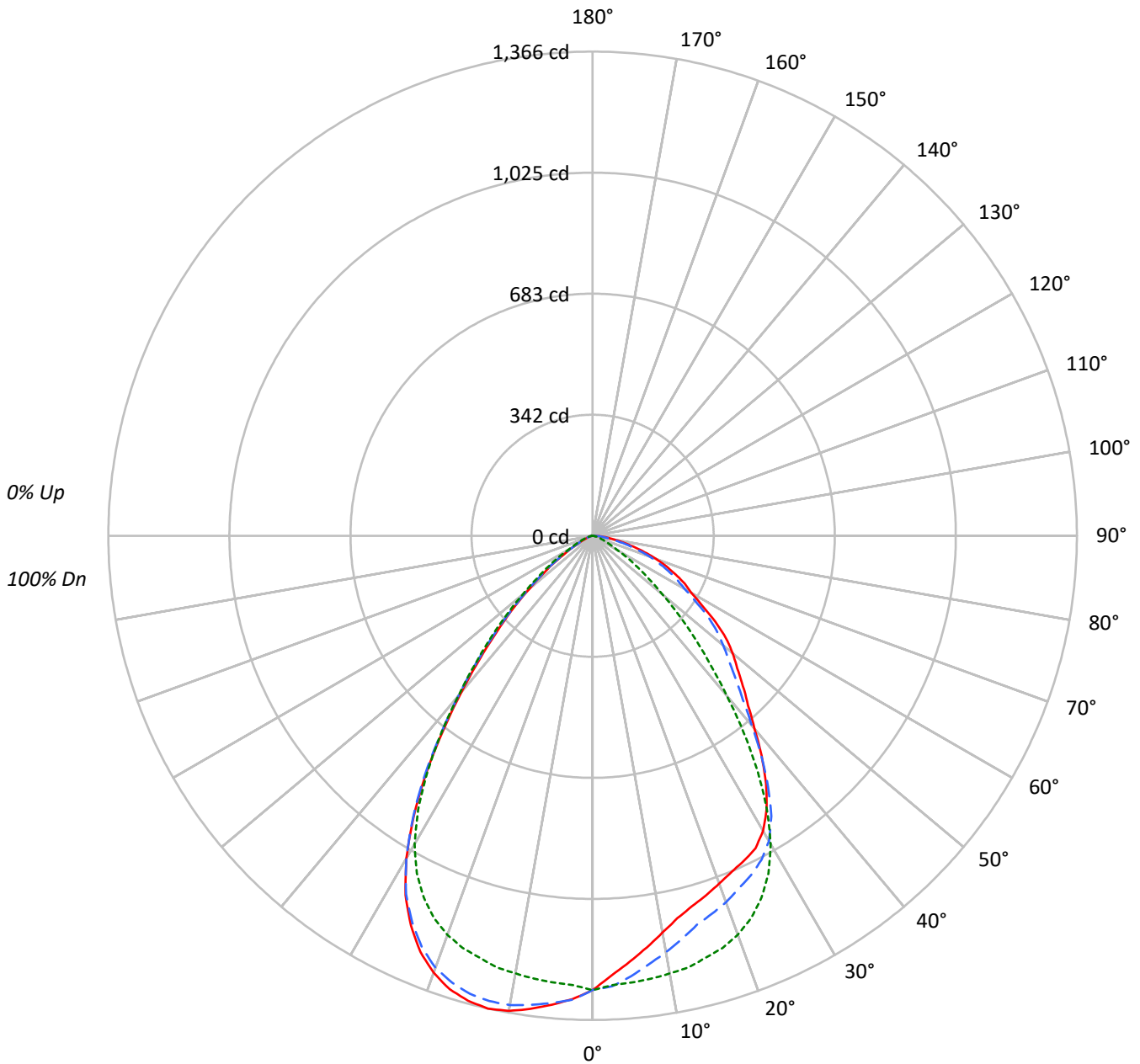
Input Watts (W): 28
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20				
RC	80				70				50				30				10			0	
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																					
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100	100	100	100
1	111	108	104	101	109	106	103	100	101	99	97	98	96	94	94	93	91	89	89	89	89
2	104	97	92	87	101	95	90	86	92	88	84	89	85	82	86	83	81	79	79	79	79
3	96	88	81	76	94	86	80	75	83	78	74	81	76	73	78	75	72	70	70	70	70
4	90	80	72	67	88	78	72	66	76	70	66	74	69	65	72	68	64	62	62	62	62
5	83	73	65	60	82	72	65	59	70	63	59	68	62	58	66	61	58	56	56	56	56
6	78	67	59	53	76	66	59	53	64	58	53	62	57	52	61	56	52	50	50	50	50
7	73	61	54	48	71	61	53	48	59	53	48	58	52	48	56	51	47	46	46	46	46
8	68	57	49	44	67	56	49	44	55	48	44	54	48	43	52	47	43	42	42	42	42
9	64	52	45	40	63	52	45	40	51	44	40	50	44	40	49	44	40	38	38	38	38
10	61	49	42	37	59	48	42	37	47	41	37	47	41	37	46	40	37	35	35	35	35

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	124932	124932	124932
5°	117974	123795	129928
10°	112470	124078	134706
15°	109170	124334	137007
20°	108276	124206	136030
25°	108716	121147	130384
30°	108191	113030	118229
35°	101414	96500	97476
40°	90366	74820	73140
45°	82641	55778	52360
50°	78144	39072	35312
55°	71856	26387	22174
60°	62782	15457	12241
65°	59427	9893	6849
70°	54140	7067	4246
75°	44772	4970	3125
80°	35246	2806	1852
85°	31422	1901	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	121.1	5.4
10°-20°	347.5	15.5
20°-30°	515.1	22.9
30°-40°	515.8	23.0
40°-50°	360.5	16.0
50°-60°	214.5	9.5
60°-70°	111.9	5.0
70°-80°	49.8	2.2
80°-90°	10.9	0.5
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	983.7	43.8
0°-40°	1499.5	66.7
0°-60°	2074.4	92.3
0°-90°	2247.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2247.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1282	1282	1282	1282	1282	
5°	1206	1247	1265	1323	1328	113
15°	1082	1136	1232	1338	1358	306
25°	1011	1057	1127	1204	1212	466
35°	852	862	811	826	819	528
45°	600	570	405	392	380	466
55°	423	396	155	136	130	375
65°	258	236	43	31	30	255
75°	119	104	13	8	8	129
85°	28	22	2	2	0	31
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1281.9	1281.9	1281.9	1281.9	1281.9	1281.9	1281.9	1281.9	1281.9	1281.9	1281.9
2.5°	1240.6	1255.5	1240.6	1245.5	1265.4	1247.2	1257.1	1257.1	1252.2	1263.7	1272.0
5°	1205.9	1220.8	1205.9	1212.5	1234.0	1215.8	1227.4	1224.1	1225.7	1235.6	1247.2
7.5°	1171.2	1182.8	1169.6	1177.8	1197.6	1182.8	1192.7	1192.7	1194.3	1209.2	1219.1
10°	1136.5	1146.4	1136.5	1143.1	1164.6	1151.4	1158.0	1159.6	1164.6	1177.8	1192.7
12.5°	1105.1	1113.4	1103.5	1113.4	1131.6	1118.3	1126.6	1128.3	1133.2	1148.1	1164.6
15°	1082.0	1090.3	1080.4	1088.6	1105.1	1095.2	1101.8	1105.1	1108.4	1121.6	1136.5
17.5°	1063.8	1070.4	1062.2	1072.1	1085.3	1073.7	1083.7	1083.7	1088.6	1101.8	1118.3
20°	1044.0	1050.6	1044.0	1052.3	1067.1	1057.2	1065.5	1065.5	1070.4	1085.3	1100.2
22.5°	1025.8	1029.1	1025.8	1032.4	1047.3	1039.1	1044.0	1045.7	1050.6	1063.8	1077.0
25°	1011.0	1017.6	1014.3	1020.9	1030.8	1022.5	1027.5	1029.1	1034.1	1045.7	1057.2
27.5°	994.5	997.8	994.5	1002.7	1011.0	1004.4	1009.3	1007.7	1011.0	1020.9	1030.8
30°	961.4	964.7	964.7	969.7	976.3	973.0	977.9	973.0	976.3	984.5	994.5
32.5°	913.5	915.2	916.8	921.8	926.7	921.8	925.1	925.1	925.1	931.7	938.3
35°	852.4	855.7	854.0	857.3	862.3	860.6	860.6	859.0	855.7	859.0	862.3
37.5°	783.0	778.1	778.1	783.0	786.3	779.7	783.0	779.7	779.7	781.4	781.4
40°	710.3	705.4	710.3	712.0	713.6	710.3	708.7	705.4	700.4	702.1	698.8
42.5°	649.2	645.9	647.6	647.6	649.2	645.9	647.6	640.9	636.0	632.7	627.7
45°	599.6	594.7	599.6	596.3	596.3	594.7	593.0	589.7	583.1	578.2	569.9
47.5°	553.4	553.4	555.0	555.0	555.0	551.7	551.7	545.1	538.5	531.9	520.4
50°	515.4	512.1	518.7	518.7	513.7	512.1	513.7	505.5	500.5	492.3	480.7
52.5°	474.1	474.1	475.8	475.8	474.1	470.8	472.4	465.8	460.9	452.6	441.1
55°	422.9	419.6	424.5	424.5	422.9	421.2	422.9	417.9	413.0	406.4	396.5
57.5°	365.1	363.4	366.7	368.4	365.1	365.1	366.7	361.8	360.1	353.5	343.6
60°	322.1	320.5	323.8	325.4	322.1	322.1	322.1	315.5	312.2	305.6	299.0
62.5°	292.4	290.7	294.0	292.4	290.7	289.1	290.7	284.1	280.8	274.2	267.6
65°	257.7	259.4	261.0	261.0	259.4	257.7	257.7	254.4	251.1	244.5	236.2
67.5°	224.7	224.7	226.3	228.0	226.3	226.3	226.3	221.4	218.1	213.1	203.2
70°	190.0	188.3	193.3	193.3	190.0	191.6	190.0	188.3	185.0	178.4	170.1
72.5°	153.6	153.6	155.3	155.3	153.6	153.6	153.6	152.0	147.0	143.7	135.5
75°	118.9	118.9	120.6	122.2	118.9	118.9	120.6	117.3	114.0	109.0	104.1
77.5°	89.2	87.6	89.2	89.2	87.6	87.6	87.6	85.9	84.2	79.3	74.3
80°	62.8	61.1	62.8	62.8	62.8	61.1	61.1	59.5	59.5	56.2	51.2
82.5°	42.9	41.3	42.9	42.9	42.9	41.3	41.3	41.3	39.6	38.0	34.7
85°	28.1	26.4	26.4	28.1	26.4	26.4	26.4	26.4	24.8	23.1	21.5
87.5°	13.2	13.2	13.2	13.2	13.2	13.2	13.2	11.6	11.6	11.6	9.9
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1281.9	1281.9	1281.9	1281.9	1281.9	1281.9	1281.9	1281.9	1281.9	1281.9	1281.9
2.5°	1265.4	1262.1	1272.0	1268.7	1270.3	1262.1	1275.3	1268.7	1276.9	1268.7	1285.2
5°	1243.9	1240.6	1255.5	1253.8	1255.5	1248.8	1263.7	1262.1	1272.0	1265.4	1283.5
7.5°	1220.8	1217.5	1234.0	1235.6	1238.9	1232.3	1252.2	1252.2	1262.1	1260.4	1280.2
10°	1194.3	1196.0	1212.5	1215.8	1222.4	1219.1	1237.3	1242.2	1255.5	1253.8	1278.6
12.5°	1169.6	1169.6	1191.0	1197.6	1202.6	1200.9	1222.4	1229.0	1243.9	1247.2	1270.3
15°	1144.8	1146.4	1166.3	1176.2	1182.8	1181.1	1204.2	1212.5	1230.7	1232.3	1260.4
17.5°	1125.0	1123.3	1144.8	1153.0	1162.9	1161.3	1186.1	1196.0	1214.2	1219.1	1245.5
20°	1108.4	1106.8	1126.6	1136.5	1143.1	1141.5	1166.3	1177.8	1194.3	1197.6	1224.1
22.5°	1088.6	1085.3	1105.1	1113.4	1120.0	1118.3	1139.8	1148.1	1164.6	1167.9	1192.7
25°	1065.5	1062.2	1080.4	1085.3	1090.3	1087.0	1105.1	1110.1	1123.3	1126.6	1151.4
27.5°	1039.1	1030.8	1045.7	1045.7	1049.0	1044.0	1057.2	1062.2	1073.7	1073.7	1096.9
30°	997.8	986.2	994.5	992.8	994.5	987.8	996.1	997.8	1006.0	1004.4	1020.9
32.5°	939.9	923.4	928.4	923.4	918.5	908.6	918.5	915.2	921.8	915.2	930.0
35°	860.6	844.1	842.5	835.9	830.9	822.7	822.7	814.4	816.0	811.1	821.0
37.5°	774.7	753.3	750.0	736.8	728.5	718.6	718.6	712.0	703.7	700.4	708.7
40°	690.5	667.4	659.1	637.6	629.4	619.5	612.9	604.6	601.3	588.1	594.7
42.5°	617.8	593.0	574.9	551.7	543.5	528.6	518.7	508.8	503.8	489.0	495.6
45°	556.7	527.0	507.1	477.4	465.8	449.3	434.5	422.9	411.3	404.7	401.4
47.5°	505.5	474.1	447.7	414.6	396.5	381.6	361.8	350.2	335.3	327.1	322.1
50°	462.5	427.8	398.1	360.1	341.9	325.4	302.3	284.1	270.9	257.7	254.4
52.5°	424.5	388.2	355.2	312.2	290.7	270.9	246.1	226.3	214.7	199.9	198.2
55°	379.9	348.6	312.2	267.6	246.1	226.3	199.9	180.1	165.2	155.3	152.0
57.5°	332.0	302.3	267.6	223.0	201.5	180.1	155.3	137.1	123.9	115.6	114.0
60°	287.4	259.4	226.3	181.7	160.2	142.1	115.6	97.5	85.9	79.3	76.0
62.5°	254.4	228.0	196.6	155.3	135.5	117.3	92.5	76.0	66.1	59.5	56.2
65°	223.0	196.6	168.5	130.5	114.0	97.5	74.3	59.5	49.6	42.9	39.6
67.5°	190.0	166.8	140.4	109.0	92.5	79.3	59.5	46.3	38.0	33.0	29.7
70°	156.9	135.5	114.0	87.6	76.0	62.8	46.3	36.3	28.1	24.8	21.5
72.5°	123.9	107.4	89.2	67.7	57.8	49.6	36.3	26.4	21.5	18.2	14.9
75°	92.5	80.9	66.1	51.2	42.9	36.3	26.4	19.8	16.5	13.2	11.6
77.5°	66.1	56.2	46.3	34.7	31.4	26.4	18.2	14.9	11.6	8.3	6.6
80°	44.6	39.6	31.4	24.8	19.8	18.2	13.2	9.9	6.6	5.0	5.0
82.5°	29.7	24.8	19.8	14.9	13.2	11.6	8.3	6.6	5.0	3.3	3.3
85°	18.2	14.9	11.6	8.3	8.3	6.6	5.0	3.3	1.7	1.7	1.7
87.5°	8.3	6.6	5.0	3.3	3.3	1.7	1.7	1.7	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1281.9	1281.9	1281.9	1281.9	1281.9	1281.9	1281.9	1281.9	1281.9	1281.9	1281.9
2.5°	1298.4	1288.5	1281.9	1290.1	1293.4	1288.5	1293.4	1301.7	1310.0	1311.6	1288.5
5°	1300.1	1290.1	1286.8	1296.8	1298.4	1296.8	1301.7	1313.3	1323.2	1326.5	1303.4
7.5°	1300.1	1293.4	1291.8	1303.4	1305.0	1303.4	1311.6	1324.8	1334.7	1341.4	1318.2
10°	1296.8	1293.4	1295.1	1305.0	1308.3	1308.3	1319.9	1334.7	1344.7	1351.3	1328.1
12.5°	1291.8	1291.8	1291.8	1303.4	1306.7	1308.3	1318.2	1338.0	1344.7	1354.6	1331.4
15°	1283.5	1283.5	1283.5	1295.1	1300.1	1300.1	1311.6	1329.8	1338.0	1348.0	1324.8
17.5°	1268.7	1268.7	1270.3	1280.2	1285.2	1285.2	1296.8	1316.6	1321.5	1333.1	1310.0
20°	1247.2	1247.2	1248.8	1258.8	1263.7	1260.4	1275.3	1291.8	1296.8	1306.7	1283.5
22.5°	1215.8	1215.8	1215.8	1225.7	1229.0	1227.4	1242.2	1257.1	1257.1	1270.3	1245.5
25°	1169.6	1172.9	1169.6	1179.5	1182.8	1181.1	1194.3	1207.5	1204.2	1219.1	1194.3
27.5°	1113.4	1111.7	1111.7	1120.0	1120.0	1118.3	1128.3	1143.1	1139.8	1149.7	1126.6
30°	1035.7	1040.7	1032.4	1044.0	1039.1	1035.7	1042.4	1055.6	1050.6	1058.9	1040.7
32.5°	946.5	939.9	939.9	939.9	943.2	935.0	941.6	948.2	943.2	951.5	931.7
35°	829.3	830.9	826.0	827.6	829.3	819.3	826.0	832.6	826.0	830.9	812.7
37.5°	712.0	713.6	702.1	708.7	702.1	698.8	705.4	708.7	702.1	707.0	687.2
40°	594.7	591.4	589.7	589.7	591.4	583.1	588.1	593.0	588.1	591.4	573.2
42.5°	492.3	490.6	487.3	489.0	484.0	482.4	484.0	489.0	484.0	487.3	474.1
45°	403.1	399.8	394.8	396.5	396.5	388.2	393.2	396.5	391.5	393.2	381.6
47.5°	320.5	315.5	315.5	313.9	313.9	310.6	315.5	313.9	308.9	312.2	300.6
50°	249.4	246.1	246.1	246.1	246.1	241.2	242.8	246.1	241.2	241.2	234.6
52.5°	194.9	190.0	186.7	186.7	186.7	185.0	185.0	186.7	181.7	181.7	180.1
55°	147.0	145.4	140.4	140.4	140.4	135.5	137.1	137.1	135.5	135.5	130.5
57.5°	109.0	104.1	100.8	100.8	97.5	97.5	95.8	97.5	94.2	94.2	90.9
60°	72.7	69.4	67.7	66.1	66.1	64.4	66.1	64.4	64.4	62.8	61.1
62.5°	52.9	49.6	46.3	46.3	46.3	44.6	44.6	44.6	44.6	44.6	42.9
65°	38.0	34.7	34.7	33.0	33.0	31.4	31.4	31.4	31.4	31.4	29.7
67.5°	26.4	24.8	23.1	23.1	23.1	23.1	23.1	23.1	21.5	21.5	21.5
70°	19.8	18.2	16.5	16.5	16.5	16.5	16.5	14.9	16.5	16.5	14.9
72.5°	13.2	13.2	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6
75°	9.9	9.9	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
77.5°	6.6	6.6	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
80°	5.0	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
82.5°	3.3	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
85°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P251630

CATALOG NUMBER: LD4B30D010 EU4B30509040 4LBSW1H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1281.9	1281.9	1281.9	1281.9	1281.9	1281.9	1281.9	1281.9
2.5°	1313.3	1311.6	1308.3	1313.3	1300.1	1295.1	1293.4	1308.3
5°	1331.4	1328.1	1328.1	1333.1	1318.2	1314.9	1311.6	1328.1
7.5°	1348.0	1344.7	1344.7	1349.6	1336.4	1333.1	1329.8	1346.3
10°	1357.9	1357.9	1357.9	1361.2	1349.6	1346.3	1344.7	1361.2
12.5°	1362.8	1362.8	1361.2	1367.8	1352.9	1352.9	1349.6	1366.1
15°	1356.2	1356.2	1356.2	1361.2	1348.0	1344.7	1344.7	1357.9
17.5°	1339.7	1339.7	1338.0	1343.0	1328.1	1328.1	1326.5	1341.4
20°	1314.9	1314.9	1311.6	1318.2	1303.4	1298.4	1296.8	1311.6
22.5°	1275.3	1273.6	1272.0	1275.3	1262.1	1258.8	1257.1	1270.3
25°	1224.1	1222.4	1219.1	1222.4	1207.5	1202.6	1202.6	1212.5
27.5°	1151.4	1151.4	1146.4	1151.4	1134.9	1133.2	1131.6	1143.1
30°	1062.2	1055.6	1052.3	1058.9	1042.4	1042.4	1039.1	1050.6
32.5°	951.5	944.9	943.2	946.5	931.7	926.7	933.3	939.9
35°	824.3	826.0	819.3	819.3	806.1	807.8	809.4	819.3
37.5°	702.1	698.8	697.1	698.8	688.8	685.5	682.2	692.2
40°	588.1	579.8	578.2	578.2	569.9	568.3	569.9	574.9
42.5°	480.7	479.1	472.4	475.8	467.5	470.8	469.1	469.1
45°	388.2	389.9	383.2	388.2	381.6	376.6	376.6	379.9
47.5°	307.3	307.3	305.6	305.6	300.6	302.3	299.0	304.0
50°	237.9	237.9	234.6	236.2	232.9	232.9	231.3	232.9
52.5°	181.7	180.1	180.1	178.4	175.1	176.8	178.4	175.1
55°	132.2	133.8	130.5	132.2	128.8	130.5	128.8	130.5
57.5°	90.9	92.5	89.2	92.5	89.2	90.9	89.2	89.2
60°	62.8	62.8	61.1	62.8	61.1	61.1	59.5	62.8
62.5°	42.9	42.9	42.9	42.9	42.9	41.3	42.9	42.9
65°	31.4	29.7	29.7	29.7	29.7	29.7	29.7	29.7
67.5°	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5
70°	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9
72.5°	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6
75°	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
77.5°	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
80°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
82.5°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
85°	1.7	1.7	1.7	0.0	1.7	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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— 0°-180° - - 45°-225° - - - - 90°-270°













(END OF REPORT)